

# FWEA Manasota Chapter

Vol 24 – November 2015

## Message from the Steering Committee

By Manasota Chapter Relations Chair  
Samantha Nehme, EI, Stantec

The holidays are upon us and the Manasota Chapter is bringing another great year to a close. Our members and sponsors continue to show their support for the Chapter which makes our events such a success. The August luncheon featured Tom Farkas, P.G. of Atkins presenting on the City of Palmetto's reclaimed water ASR system. Thank you to Tom and all who attended, it was a great turnout!



Tom Farkas, P.G. of Atkins presenting at the luncheon meeting held on August 13th.

Our upcoming luncheon will be held on Thursday, December 3rd at the Sarasota County Operations Center (BOB Building) and will feature Robert Garland, McKim and Creed and Cheryl Robitzsch, Haskell presenting City of Venice RO Water Treatment Plant and SCADA System Project: Bring on the Retrofit! November 25th is the last day to pre-register so reserve your seat today by going to [www.fwea.org](http://www.fwea.org) or by contacting Linda Maudlin at [lmaudlin@greeley-hansen.com](mailto:lmaudlin@greeley-hansen.com).

The Chapter held its first Sporting Clay Shoot Event on October 16th. Fun was had by all during the clay shoot and the fusible PVC demonstration performed by Underground Solutions. Thank you to Mike Knowles

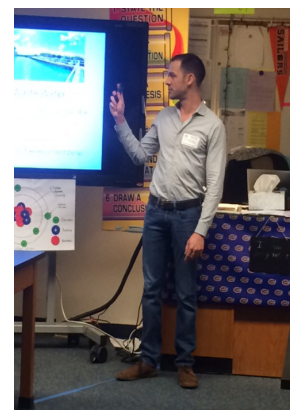
for spearheading a great event, to Linda Maudlin, Kristiana Dragash, and Mike Nixon for helping behind the scenes, and for all of the participants and sponsors for making this event a huge success! We look forward to making this an annual Chapter event.



Steering Committee members Linday Marten and Mike Nixon pose with their team for the Chapter's First Annual Sporting Clay Shoot Event.

As the year comes to a close, it is time for the annual joint FWEA, AWWA, APWA, FES, and ASCE holiday social. We look forward to this every year and feel it is a great way to end the year celebrating the holidays and the local professional societies. Mark your calendars for December 17th from 5:30 p.m. to 7:30 p.m. at Evie's Tavern & Grill on Bee Ridge Road.

In October, Kyle Kellogg, Young Professionals and Outreach Coordinator, gave a presentation about the environmental engineering field to the Sarasota High School engineering program students.



Kyle Kellogg speaks to Sarasota High School students about careers in Environmental Engineering. FWEA spoke to students in 2015 as part of their outreach program, and is committed to continue to do so in 2016.

Continued from page 1

The classroom was full of students eager to learn about the profession and what it is like to be a professional. We look forward to presenting at schools throughout the area as the school year progresses. These presentations are a part of the effort to make students aware of the industry and the possibilities that it offers.

Another great program in the area that teaches students about the industry from engineering to architecture and construction is ACE (Architecture Engineering and Construction). ACE is a mentor program for high school students and inspires them to pursue careers in design and construction. It is now the industry's most respected high school mentoring program, with tens of thousands of students—and growing. The ACE Mentor Program of Sarasota, Inc. is the local affiliate of the national ACE Mentor Program of America. Last year was the inaugural year partnering with Riverview High School, with a record participation of 74 students in the program! This year's mentors, including myself, are excited to be working with new and returning students. To find out more about the program and how you can volunteer or sponsor the program contact me at Samantha. Nehme@stantec.com.

Many thanks to our sponsors who keep our Chapter thriving. Sponsors get an advertisement in the quarterly newsletter, recognition at all of our events, and the opportunity to submit technical articles for the newsletter. Don't miss the opportunity to spotlight the projects that you all work so hard on!

We wish all of our members and sponsors the happiest of holidays and thank you for your continued support and participation.



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# Calendar of Upcoming Events

## NOVEMBER

- 3 AWWA Region X Annual Water Quality Treatment Workshop, Lakewood Ranch
- 6 FWEA/FBC Joint Workshop, Jacksonville
- 6 FES Myakka Chapter Annual Golf Tournament, Lakewood Ranch
- 18 ASCE/FES Suncoast Chapter and Myakka Chapter Luncheon, Sarasota
- 11/30-12/3 FSAWWA 2015 Fall Conference, Orlando

## November

SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

## DECEMBER

- 3 FWEA Manasota Chapter Luncheon, Sarasota
- 11 FWEA Board of Directors Meeting, Orlando
- 17 ASCE Suncoast Chapter Luncheon, Sarasota
- 17 FWEA, AWWA, APWA, FES, and ASCE Joint Holiday Social, Sarasota

## December

SUN	MON	TUE	WED	THU	FRI	SAT
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26

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# Monthly Feature: Restrained Joint Ductile Iron Pipe: Proven Reliable for Stressful Utility Installations

By Gary Gula – McWane Ductile

## GASKETS ARE GREAT



NON-RESTRAINED TYTON JOINT – CUTAWAY VIEW

Standard issue rubber gaskets are the reliable workhorse of any ductile iron pipe joint. They provide long-lasting flexibility and a watertight seal against internal pressures

upwards of 1,000 psi. What they don't do however is bind the joint longitudinally against such forces. In fact, regardless of diameter, without assistance from other variables, a push-on or mechanical joint would calmly separate lengthwise against pressures as low as 50 psi. In most pipe joints, the spigot end buries and sets into the bell approximately 2 or 2 1/2 inches past the compressed gasket. The weight of the pipe itself, along with the weight of its contained fluid, the weight of the trench backfill in contact with the pipe and associated soil-to-metal friction all play a part in stabilizing the pipe joint against aforementioned internal forces. When the internally generated thrust forces caused by fluid transport and directional changes in the pipeline exceeds the "natural forces" mentioned previously, the answer is simple and sure ... RESTRAINED pipe and fitting JOINTS.


## WHAT'S IT ALL ABOUT

Think of how you feel when riding a roller coaster or a log flume ride that suddenly juts left and up after a quick downhill thrill! You feel as if all things are being thrown to the right, and hard. That's the law of equal and opposite reactions. Same things happens from within a pipe carrying water or other fluids at each change in direction, especially so at fittings. The old-fashioned answer was huge blocks of poured concrete behind and against the fittings, with the theory being that if the fitting is "controlled", no adjacent joints in the pipeline are in jeopardy. Great idea, except today's

infrastructure spaghetti and pace of construction have minimized the effectiveness and tolerance for space-hogging and longtime-to-set thrust blocks being utilized. The modern answer is RESTRAINED JOINTS for pipes and fittings instead of cumbersome thrust blocks. Each of the domestic DIP manufacturers has their own versions of RJ pipe, and when the dust of discussion settles ... they're all the same. They work within themselves and protect your pipeline from longitudinal separations against a minimum rating of 350 psi, which with ductile iron systems equates to a 900 psi working pressure. All of the manufacturers restrained joints have more than 25 years of successful active-duty service in all types of conditions and installations in diameters up-through 64-inches.

## NEEDS AND DEEDS


Restrained joint needs have been both over-estimated and under-done through the years because the design calculations were considered cumbersome



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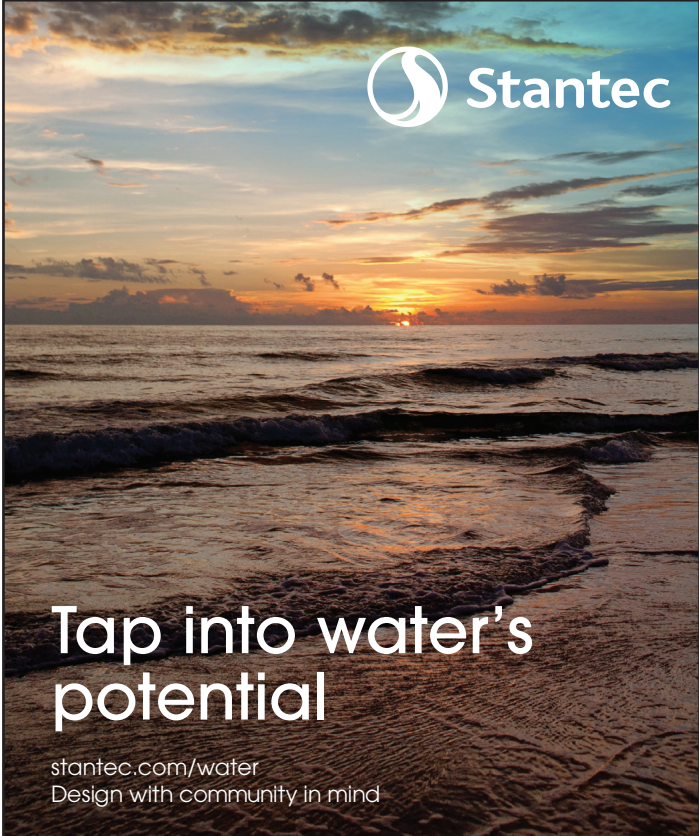
# Monthly Feature: Restrained Joint Ductile Iron Pipe: Proven Reliable for Stressful Utility Installations

By Gary Gula – McWane Ductile

and confusing, even to engineers. However, the proven theory of restrained joint needs and designs is relatively simple. Consider yourself standing at one end of a long rope placed on the ground. Now pick up your end of the rope and repeatedly shake it violently in any or all directions you like. Ripples and wiggles, yes- those are technical terms- will be seen for some distance away and in various directions depending upon how hard you rattle the rope. This is exactly the effect that fluid coursing through a pipeline will have upon the pipes themselves, especially when passing through a "sudden change in direction", i.e. a fitting. And simply stated, all pipe or fitting joints within that "wiggle zone" must be restrained or they could separate, even though they are buried. Several excellent free-to-download thrust restraint design calculators are available from various pipe and fitting manufacturers today on the web. Each follows the principles outlined in AWWA standards and DIPRA guidelines, and will quickly recommended the minimum contiguous lengths that must be restrained from each side of any pipeline fitting or change in course.

## DETAILS, PLEASE

Consider it the same as a bill to be paid. For example, if the invoice was for \$100,000 and previous payments have accounted for \$60,000 - there remains a balance due of \$40,000 to settle the debt. Similarly, but in "pipeline terms", if 100,000 lbs. of thrust force is developed internally by fluid movements, and the adjacent combination of pipe weights, earth loads, and frictional resistance with the trench soil accounts for 60,000 lbs. of "natural" resistance - then 40,000 lbs. (plus decided safety factor) must be "balanced out" or accommodated by the use of restrained joints. This "balance" is spread over and away from the generating element by installing the computed result of "required restraint length" on each side of the epicenter (typically a fitting such as a bend or tee). Based upon pipe diameter, working pressure, and other design factors this could equate to one restrained joint on each side of the fitting or several hundred feet of consecutive restrained joints on each side of the fitting. Integrally-cast (extended bell) restrained joint



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# Monthly Feature: Restrained Joint Ductile Iron Pipe: Proven Reliable for Stressful Utility Installations

By Gary Gula – McWane Ductile



SETUP FOR DIRECTIONAL DRILLING WITH DI

pipes available from all ductile iron pipe manufacturers provide the greatest degree of joint surety against sudden or steady thrust forces.

They all work by “ring-on-ring” “metal against metal” longitudinally locked arrangement in front of the compressed gasket in the same bell section.

This maintains the lengthwise integrity of the connections while also still allowing joint flexibility and deflections as needed. These joints have end-pull ratings and experiences equal to or greater than the pipe barrel itself, making them ideal for modern and environmentally considerate installations such as HDD (horizontal directional drilling) and pipe bursting replacements (PBR). They are also ideal for aerial (unburied) installations such as bridge crossings, temporary bypass lines, and the like.

## BACK TO GASKETS

A ready-set-go version of joint restraint is also available through the use of specialized gaskets offered by all DIP manufacturers. Vulcanized stainless steel segments with gripping-ridges located in the heel of the gasket bulb produce a controlled bite into the exterior of the pipe barrel during the gasket compression produced in routine push-joint assembly. This option permits on-the-fly adjustments in the field toward contiguous restrained joint segment lengths if needed, without ever waiting for a new or additional piece of foundry-fabricated RJ pipe to be delivered. This provides immediate and effective control by the installer or governing inspector based upon observed circumstances. Simply substitute a restraining gasket in the pipe bell instead of the standard gasket, and you’ve got a fully restrained system up to the next pipe bell. Many large and otherwise complicated cities and towns,

such as New York City NY, Philadelphia PA, Detroit MI and Los Angeles CA have adopted “segmented restraint gaskets” as their default option to ease inventories, scheduling, and simplify ordering along with increasing flexibility and instant adaptation to the unknown surprises of urban construction. All things look great and easy in the “X” and “Y” views of engineered project plans. When the trench opens up and “Z” enters the picture, quick and reliable adjustments are a must. It should be noted these segment-style restraining gaskets do provide considerable end-pull strength, which you know if you’ve ever tried to take one apart; but still rate at about one-third (1/3) of the safe end-pull resistance of their as-cast counterparts and therefore are not recommended for aerial or other long-term unburied installations, especially where repetitive vibrations are anticipated or known (such as bridge crossings). Nor are they responsibly suggested for higher-stress applications such as HDD or PBR installations.

## ONE LAST THING

All mechanical joint fittings within any computed or designated restraint-joint zone of the pipeline can easily be restrained as well with wedge-action retainer glands, used in-lieu of standard accessories for those joints. Often referred to as “megalugs”, these glands provide reliable high-pressure restraint to the fittings and their connections to the adjacent restrained joint pipes, without much damage potential to the pipes themselves. Given the innate strength and proven durability and resilience of ductile iron pipes over time, factors detrimental to alternate materials do not bother or diminish DIP in any way. Point loads and cyclic stresses which have contributed to failures of other piping materials in service do not even enter into the discussion or consideration of ductile iron restrained joint systems. That’s just another known and proven benefit to enhance the reliability and options afforded by the ultimate utility option .... DUCTILE IRON PIPE.

# FWEA Manasota Chapter Steering Committee Officers

<p><b>Chair</b> Lindsay Marten: 941.225.6178</p> <p><b>Vice Chair</b> Mike Knowles: 941.378.3579</p> <p><b>Treasurer/Membership</b> Mike Jankowski: 813.281.7322</p> <p><b>Secretary</b> Linda Maudlin: 941.378.3579</p>	<p><b>Chapter Relations</b> Samantha Nehme: 941.921.4183</p> <p><b>Young Professionals and Outreach Coordinator</b> Kyle Kellogg: 941.225.4823</p> <p><b>Communications</b> Rachel Cantor: 813.286.2075</p> <p><b>Special Events Coordinator</b> Mike Nixon: 941.379.3404</p>	<p><b>Director at Large</b> Kristiana Dragash: 941.371.9832</p> <p><b>At-Large</b> Chuck Hlavach: 941.915.4861 Jeff Goodwin: 941.792.8811 Julie Karleskint: 941.378.2862 Laura Bumberger: 941.371.9832</p> <p><b>Special Events Coordinator</b> Mike Nixon: 941.379.3404</p>
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If you are interested in joining the Steering Committee, please contact us. We are currently seeking Utility Liaisons and additional At-Large Members.



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# Luncheon Meeting - December 3, 2015

## City of Venice RO WTP and SCADA System Project: Bring on the Retrofit!

by Robert Garland PE (McKim and Creed) and Cheryl Robitzsch, PE (Haskell)

The City of Venice is a small seasonal coastal community along the southeastern coast of Florida. Due to low water quality and high chlorides the City's utility utilizes reverse osmosis (RO) membranes for 4.4 mgd plant that was last expanded in the 1990's. In 2011, the utility knew it needed to upgrade their aging membranes and began looking at the feasibility of building a new plant, but with the recessionary economic environment found itself in need of using a creative way to upgrade the system and get the best value for engineering, equipment and construction. In 2012, they made a decision to retrofit the existing facility utilizing design build to meet schedule, control budget and get the best value. Their goals were to retrofit the existing buildings with new membrane skids that could meet the existing TDS and flow conditions, but have the flexibility to decrease well withdrawals by second stage treatment and increase capacity without increasing well withdrawals through increased recovery. To do this the City chose to utilize design build and selected the team of Haskell and McKim & Creed in late 2012 to complete the design and install the new membranes, pumps, filters and SCADA system. This presentation will provide owner's, engineer's and contractor's information on how the City of Venice best utilized their limited public funds and resources, maintained continuous high quality drinking water to their customers, worked in collaboration with their owners representative and design build team to execute a phased installation of four, 1.1 mgd membrane skids during their high season and maintain uninterrupted service.

### Cheryl Robitzsch, PE, Haskell

Cheryl is the Director of Design at The Haskell Company where she is responsible for major project development and business development in Florida and oversees strategic design relationships for the Water Division. Cheryl is a Professional Engineer in three states, and has worked in the water and wastewater industry for 29 years. Cheryl served as the Director of Project Development and Project Manager for the City of Venice RO project.

### Robert Garland, PE, McKim and Creed

Robert Garland has been providing planning, design, and construction services to municipal, state, and federal agencies for 30 years. In addition to being a licensed engineer and geologist, he is also a former licensed contractor in numerous states. He currently serves as Vice President and Regional Manager for Southeast Operations for McKim & Creed, a national engineering firm.

## FWEA MANASOTA CHAPTER LUNCHEON MEETING

### Sarasota County Operations Center (BOB Building) Conference Room 1

1001 Sarasota Center Blvd., Sarasota, FL 34240  
Registration - 11:30 • Lunch and Program - 12:15

Menu: 1) Brown sugar baked ham , 2) turkey, 3) bread dressing with gravy, 4) mashed potatoes, 5) green beans 6) cranberry sauce 7) cookie platter

Please register by Wednesday, November 25th

Pre-registered Members: \$15 • Pre-registered Non-members: \$20 • Walk-in: \$25

You can register online at [www.fwea.org](http://www.fwea.org) or register by phone, fax, or e-mail to Linda Maudlin

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The Manasota Chapter is in search of Project Spotlight articles for future newsletter editions. Chapter sponsors are encouraged to submit an article highlighting a local project. Please contact Samantha Nehme at [samantha.nehme@stantec.com](mailto:samantha.nehme@stantec.com) or 941-921-4183 for more information.